DISK DRIVE CONTROL SYSTEM HAVING A SERVO PROCESSING ACCELERATOR CIRCUIT

ABSTRACT

1   Disclosed is a control system for processing sampled servo data in a disk drive. The

2   control system includes a microprocessor and a servo processing accelerator circuit for

3   performing operations on the sampled servo data while the microprocessor is executing firmware

4   code. The accelerator circuit supports the use of a higher servo bandwidth thus allowing a higher

5   track density resulting a greater storage capacity for the disk drive. Also, the accelerator circuit

6   relieves the microprocessor of the ordinary servo processing function. Thus, the

7   microprocessor's limited processing capacity to be directed to other controller and interface

8   functions of the disk drive. Only under unusual conditions, such as a write-unsafe (WUS) limit

9   exception, does the microprocessor need to direct processing capacity to the servo processing

10   function. Further, the accelerator circuit may be a decreased response time after reading the

11   servo data from the disk.